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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/677,446 | 09/29/2000 | Zohar Sivan | 6727/1H144-US1 | 4421 |

| 7590 | 09/23/2005 |
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| EXAMINER |
|---|
| PITARO, RYAN F |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2174 | |

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
| **Office Action Summary** | 09/677,446 | SIVAN ET AL. |
| | Examiner | Art Unit | |
| | Ryan F. Pitaro | 2174 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on <u>24 June 2005</u>.

2a) ☐ This action is **FINAL**.  2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-28* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

1.      This communication is responsive to Amendment filed 6/24/2005.

2.      Claims 1-28 are pending in this application.  Claims 1, 12, 23 and 25 are

independent claims.  In the Amendment, claims 24-28 were added as new.    This

action is made non-final.

### Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

Claims 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Toklu

et al ("Toklu", US 6,549,643).

As per independent claim 25, Toklu teaches a computer implemented method for

organizing a sequence of video frames comprising: generating a first portion of a

segment of the sequence by:

For each frame beginning from an initial frame in the sequence computing at

least one parameter indicative of a characteristic of the frame (Column 10 lines 21-22);

determining distances between the frames in the sequence responsively to differences

in the at least one parameter among the frames (Column 10 lines 23-31); and finding, responsively to the distances, a bounding subset comprising at least three of the frames in the sequence (Column 9 lines 52-54), such that the first portion comprises the frames in the sequence that are bounded by the at least three of the frames in the bounding subset (Column 10 lines 23-45); generating a second portion of the segment by adding to the segment further frames in the sequence subsequent to the first portion while determingn that the respective distances between the added further frames and the representative frame are within a predefined bound (Column 10 lines 45-50).

As per claim 26, which is dependent on claim 25, Toklu teaches a method wherein finding the bounding subset comprises selecting the bounding subset so as to maximize a sum of the distances between all of the frames in the subset, while each of the distances is no greater than a predetermined maximum (Column 10 lines 35-45).

As per claim 27, which is dependent on claim 26, Toklu teaches a method wherein selecting the bounding subset comprises: choosing an initial bounding subset Column 10 lines 21-22; determining the sum the of the distances between one of the further frames added to the sequence and the frames in the intial bounding subset; and replacing one of the frames will increase the sum of the distances between all of the frames in the subset (Column 10 lines 35-45).

As per claim 28, which is dependent on claim 26, Toklu teaches a method wherein selecting the one of the frames to be the representative comprises, upon determining that a distance between a given frame in the sequence and at least one of the frames in the bounding subset is greater than the predetermined maximum,

terminating generation of the first portion and choosing as the representative frame the one of the frames immediately preceding the given frame in the sequence, and wherein generating the second portion comprises adding the given frame to the second portion (Column 10 lines 25-35).

## Claim Rejections - 35 USC § 103

Claims 1-10,12-21, and 23 are rejected under 35 U.S.C. 102(b) as anticipated by Edgar et al ("Edgar", US 5,537,530) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toklu et al ("Toklu", US 6,549,643).

### As a 102(b) rejection:

As per independent claim 1, Edgar teaches a computer-implemented method for organizing a sequence of video frames, comprising

selecting one of the frames in the sequence as an initial frame in a first portion of a segment of the sequence (Edgar, col. 4, lines 43-49);

adding further frames in the sequence, subsequent the initial frame, to the first portion, while a measure of similarity of each of the added frames to the frames already in the first portion is within a first predefined bound (Edgar, col. 4, lines 57-61);

selecting one of the added frames in the first portion to be a representative frame for the segment (Edgar, col. 4, lines 57-61); and

generating a second portion of the segment by adding automatically, under

control of computer program instructions and without intervention by a user (col.3, lines 34-38; col.7, lines 59-63), still further frames in the sequence, subsequent to the last frame in the first portion, to the second portion, while determining that the measure of similarity of each added frame to the representative frame is within a second predefined bound (Edgar, col. 4, lines 57-61; col. 7, lines 56 – Column 8 line 1, likelihood value for scene boundary is measured in terms of an image similarity metric or coordinates of the images in a parameter space); and

determining the first and second portions together to constitute the segment that is represented by the representative frame (Edgar, col. 5, lines 1-5).

Independent claims 12 and 23 are similar in scope to claim 1, and are therefore rejected under similar rationale.

As per claim 2, which is dependent on claim 1, Edgar teaches a method according to claim 1, wherein selecting the frame as the initial frame comprises selecting the first frame subsequent to a final frame in a preceding segment (Edgar, col.5, lines 39-43).

Dependent claim 13 is similar in scope to claim 2, and is therefore rejected under similar rationale.

As per claim 3, which is dependent on claim 1, Edgar teaches a method according to claim 1, wherein adding the further frames comprises, for each of the added frames, computing at least one parameter indicative of a characteristic of the added frame, and wherein the measure of similarity comprises a distance measured

between the parameters of the added frame and the frames already in the first portion

(Edgar, col.8, lines 12-16).

Dependent claim 14 is similar in scope to claim 3, and is therefore rejected under

similar rationale.

As per claim 4, which is dependent on claim 3, Edgar teaches a method

according to claim 3, wherein computing the at least one parameter comprises

computing a vector of parameters, and wherein the distance comprises a vector

distance (Edgar, col. 8, lines 12-16).

Dependent claim 15 is similar in scope to claim 4, and is therefore rejected under

similar rationale.

As per claim 5, which is dependent on claim 3, Edgar teaches a method

according to claim 3, wherein adding the further frames comprises finding a bounding

subset of the frames in the first portion, and adding the further frames to the first portion

while the distance between each of the added frames and the frames in the

representative set is within the predefined bound (Edgar, col. 4, lines 57-61; col. 8, lines

12-16).

Dependent claim 16 is similar in scope to claim 5, and is therefore rejected under

similar rationale.

As per claim 6, which is dependent on claim 5, Edgar further teaches a method

according to claim 5, wherein finding the bounding subset comprises selecting the

subset so as to maximize a sum of the distances between all of the frames in the subset

(Edgar, col.8, lines 55-62; Table 2; col.9, lines 50-55).

Dependent claim 17 is similar in scope to claim 6, and is therefore rejected under similar rationale.

As per claim 7, which is dependent on claim 6, Edgar further teaches a method according to claim 6, wherein selecting the subset comprises determining the sum of the distances between one of the further frames added to the sequence and the frames in the bounding subset, and replacing one of the frames in the subset with the one of the further frames if replacing the one of .the frames in the subset will increase the sum of the distances between all of the frames in the subset (Edgar, col. 9, lines 56-67; col.10, lines 50-67).

Dependent claim 18 is similar in scope to claim 7, and is therefore rejected under similar rationale.

As per claim 8, which is dependent on claim 1, Edgar teaches a method according to claim 1, wherein selecting the representative frame comprises selecting a final one of the frames added to the first portion to be the representative frame (Edgar, col. 4, lines 57-61).

Dependent claim 19 is similar in scope to claim 8, and is therefore rejected under similar rationale.

As per claim 9, which is dependent on claim 8, Edgar teaches a method according to claim 8, wherein the frame in the sequence following the representative frame is outside the first predefined bound of the frames in the first portion (Edgar, col. 5, lines 1-5).

Dependent claim 20 is similar in scope to claim 9, and is therefore rejected under

similar rationale.

As per claim 10, which is dependent on claim 1, Edgar teaches a method according to claim 1, and comprising storing the sequence in an archive, and indexing the archive using the representative frame (Edgar, col. 5, lines 6-13).

Dependent claim 21 is similar in scope to claim 10, and is therefore rejected under similar rationale.

**In the alternative, if Edgar fails to teach:**

As per independent claim 1, Edgar teaches a computer-implemented method for organizing a sequence of video frames, comprising selecting one of the frames in the sequence as an initial frame in a first portion of a segment of the sequence (Edgar, col. 4, lines 43-49);adding further frames in the sequence, subsequent the initial frame, to the first portion, while a measure of similarity of each of the added frames to the frames already in the first portion is within a first predefined bound (Edgar, col. 4, lines 57-61);selecting one of the added frames in the first portion to be a representative frame for the segment (Edgar, col. 4, lines 57-61). Edgar fails to distinctly point out generating a second portion by adding frames, which are similar to the representative frame with a

second predefined threshold. However, Toklu teaches generating a second portion of

the segment by adding automatically, under control of computer program instructions

and without intervention by a user, still further frames in the sequence, subsequent to

the last frame in the first portion, to the second portion, while determining that the

measure of similarity of each added frame to the representative frame is within a

second predefined bound (Column 10 lines 35-45); and determining the first and second

portions together to constitute the segment that is represented by the representative

frame (Column 10 lines 35-45). Therefore it would have been obvious to an artisan at

the time of the invention to combine the adding of further similar frames teaching of

Toklu into the method of Edgar. Motivation to do so would have been so that no similar

frames within a the threshold would be left out of the sequence.

Independent claims 12 and 23 are similar in scope to claim 1, and are therefore

rejected under similar rationale.

As per claim 2, which is dependent on claim 1, Edgar-Toklu teaches a method

according to claim 1, wherein selecting the frame as the initial frame comprises

selecting the first frame subsequent to a final frame in a preceding segment (Edgar,

col.5, lines 39-43).

Dependent claim 13 is similar in scope to claim 2, and is therefore rejected under

similar rationale.

As per claim 3, which is dependent on claim 1, Edgar-Toklu teaches a method

according to claim 1, wherein adding the further frames comprises, for each of the

added frames, computing at least one parameter indicative of a characteristic of the

added frame, and wherein the measure of similarity comprises a distance measured between the parameters of the added frame and the frames already in the first portion (Toklu, Column 10 lines 21-51).

Dependent claim 14 is similar in scope to claim 3, and is therefore rejected under similar rationale.

As per claim 4, which is dependent on claim 3, Edgar-Toklu teaches a method according to claim 3, wherein computing the at least one parameter comprises computing a vector of parameters, and wherein the distance comprises a vector distance (Edgar, col. 8, lines 12-16).

Dependent claim 15 is similar in scope to claim 4, and is therefore rejected under similar rationale.

As per claim 5, which is dependent on claim 3, Edgar-Toklu teaches a method according to claim 3, wherein adding the further frames comprises finding a bounding subset of the frames in the first portion, and adding the further frames to the first portion while the distance between each of the added frames and the frames in the representative set is within the predefined bound (Toklu, Column 10 lines 21-51).

Dependent claim 16 is similar in scope to claim 5, and is therefore rejected under similar rationale.

As per claim 6, which is dependent on claim 5, Edgar-Toklu further teaches a method according to claim 5, wherein finding the bounding subset comprises selecting the subset so as to maximize a sum of the distances between all of the frames in the subset (Toklu, Column 10 lines 21-515).

Dependent claim 17 is similar in scope to claim 6, and is therefore rejected under similar rationale.

As per claim 7, which is dependent on claim 6, Edgar-Toklu further teaches a method according to claim 6, wherein selecting the subset comprises determining the sum of the distances between one of the further frames added to the sequence and the frames in the bounding subset, and replacing one of the frames in the subset with the one of the further frames if replacing the one of the frames in the subset will increase the sum of the distances between all of the frames in the subset Toklu, Column 10 lines 21-51).

Dependent claim 18 is similar in scope to claim 7, and is therefore rejected under similar rationale.

As per claim 8, which is dependent on claim 1, Edgar-Toklu teaches a method according to claim 1, wherein selecting the representative frame comprises selecting a final one of the frames added to the first portion to be the representative frame (Edgar, col. 4, lines 57-61).

Dependent claim 19 is similar in scope to claim 8, and is therefore rejected under similar rationale.

As per claim 9, which is dependent on claim 8, Edgar-Toklu teaches a method according to claim 8, wherein the frame in the sequence following the representative frame is outside the first predefined bound of the frames in the first portion (Edgar, col. 5, lines 1-5).

Dependent claim 20 is similar in scope to claim 9, and is therefore rejected under

similar rationale.

As per claim 10, which is dependent on claim 1, Edgar-Toklu teaches a method

according to claim 1, and comprising storing the sequence in an archive, and indexing

the archive using the representative frame (Edgar, col. 5, lines 6-13).

Dependent claim 21 is similar in scope to claim 10, and is therefore rejected

under similar rationale.


**In the case that Edgar teaches:**


### Claim Rejections - 35 USC § 103


The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claim 11,22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Edgar et al ("Edgar", US 5,537,530).


As per claim 11, which is dependent on claim 1, Edgar fails to teach a method

according to claim 1, and comprising compressing the sequence using the

representative frame. However, OFFICIAL NOTICE is given that compressing video

data and using a representative frame, or thumbnail, is well known in the art. It would

have been obvious to one skilled in the art at the time of invention to include the ability

to compress the video data in the invention of Edgar because it would reduce the

amount of space needed to provide for the program, therefore making it more efficient.

Dependent claim 22 is similar in scope to claim 11, and is therefore rejected

under similar rationale.


Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edgar et

al ("Edgar", US 5,537,530) in view of Toklu et al ("Toklu", US 6,549,643).


As per claim 24, which is dependent on claim 5, Edgar fails to teach a subset

comprising of at least three frames. However, Toklu teaches a method wherein the

bounding subset comprises at least three of the frames in the first portion (Toklu,

Column 9 lines 52-54). Therefore it would have been obvious to an artisan at the time of

the invention to combine the at least three frame teaching of Toklu into the method of

Edgar. Motivation to do so would have been to ensure a big enough sample to choose a

representative frame without all three frames being the same.



**In the alternative, if Edgar fails to teach:**

## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 11,22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Edgar et al ("Edgar", US 5,537,530) in view of Toklu et al ("Toklu", US 6,549,643).

As per claim 11, which is dependent on claim 1, Edgar fails to teach a method

according to claim 1, and comprising compressing the sequence using the

representative frame. However, OFFICIAL NOTICE is given that compressing video

data and using a representative frame, or thumbnail, is well known in the art. It would

have been obvious to one skilled in the art at the time of invention to include the ability

to compress the video data in the invention of Edgar because it would reduce the

amount of space needed to provide for the program, therefore making it more efficient.

Dependent claim 22 is similar in scope to claim 11, and is therefore rejected

under similar rationale.

As per claim 24, which is dependent on claim 5, Edgar fails to teach a subset

comprising of at least three frames. However, Toklu teaches a method wherein the

bounding subset comprises at least three of the frames in the first portion (Toklu,

Column 9 lines 52-54). Therefore it would have been obvious to an artisan at the time of

the invention to combine the at least three frame teaching of Toklu into the method of

Edgar. Motivation to do so would have been to ensure a big enough sample to choose a

representative frame without all three frames being the same.

### *Response to Arguments*

Applicant's arguments with respect to claims 1-24 have been considered but are

moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ryan F. Pitaro whose telephone number is 571-272-

4071. The examiner can normally be reached on 7:00am - 4:30pm M-Th, and

alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kristine Kincaid can be reached on 571-272-4063. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).


Ryan Pitaro
Art Unit 2174
Patent Examiner

RFP

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